

## The genus *Acalyptris* MEYRICK (Lepidoptera, Nepticulidae) in the USSR : Distribution and taxonomy

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### Summary

Fourteen species of the leaf-mining genus *Acalyptris* MEYRICK occurring in the USSR are reviewed. The species fall into two species groups. *Acalyptris piculus* sp. n., *A. brevis* sp. n. and *A. egidijui* sp. n. are described. *A. turanicus* (PUPL.) is synonymized with *A. lvovskyi* (PUPL.). A key to the species, short diagnoses and figures of all the *Acalyptris* species occurring in the Soviet Union are given.

### Zusammenfassung

Es werden 14 Arten der blattminierender Gattung *Acalyptris* MEYRICK (Lepidoptera, Nepticulidae) untersucht. Sie werden in 2 Arten-Gruppen aufgeteilt. Neu beschrieben wird *Acalyptris piculus* sp. n., *A. brevis* sp. n. und *A. egidijui* sp. n. *A. turanicus* (PUPL.) wird mit *A. lvovskyi* (PUPL.) synonymisiert. Eine Schlüsseltabelle, Kurzdiagnosen und Abbildungen aller Arten der Gattung *Acalyptris* in der UdSSR werden beigelegt.

### Introduction

In the USSR the genus *Acalyptris* occurs only in the southern deserts and dry mountainous areas. The first scanty data on this genus from the USSR was obtained from material collected by V. I. KUZNETZOV in 1952 from the Western Kopet-Dag mountains, by PASTUCHOV in 1965, from Uzbekistan and by V. KRIVCHATSKYI in 1981-82 from the northern part of the Kara-Kum desert. However, a more extensive and excellent material has been received recently from expeditions undertaken in 1965-1983 by M. I. FALKOVITSH in various localities of the Kizilkum and Karakum deserts as well as the Kuldzhunktau mountains. On the basis of this material, and the collections of A. L. LVOVSKYI and I. M. KERZHNER from Mongolia in 1980-1981, the first review of the species of the genus *Acalyptris* from the deserts of Mongolia and the USSR was presented, including the description of 10 new species (PUPLESIS, 1984). A further two new species were described later (FALKO-

VITSH, 1986). However, this was followed by several specially equipped expeditions to largely unexplored and unknown areas in Soviet Central Asia. The considerable material collected on these expeditions should provide more data on the genus *Acalyptris* and thereby provide a better basis for future taxonomic revisions. The type material of all species described in the genus *Acalyptris* from the USSR is deposited in the collection of the Zoological Institute of the USSR Academy of Sciences (Leningrad).

### *Acalyptris* MEYRICK

*Acalyptris* MEYRICK, 1921 : 385-416.

Type-species : *A. psammophricta* MEYRICK, 1921.

The western Palaearctic-southern African genus *Niepeltia* STRAND, 1934 and the Nearctic genus *Microcalyptris* BRAUN, 1925 were synonymized in the absence of clear differences in genital and adult morphology by PUPLESIS (1984 : 486-487). The genus *Acalyptris* MEYRICK, 1921 was described on the basis of a single female specimen. After careful reexamination of this specimen, the genera *Niepeltia* and *Microcalyptris* were finally synonymized with *Acalyptris* by VAN NIEUKERKEN (1986). About 47 species of this genus are known. The larval foodplants of all USSR species are unknown. Other species of the genus are known to feed on Anacardiaceae, Capparaceae, Combretaceae, Cyperaceae, Euphorbiaceae, Fabaceae, Limoniaceae, Loranthaceae, Lythraceae, Myrtaceae, Platanaceae, Rhamnaceae, Rhizophoraceae, Rubiaceae, Rutaceae and Theaceae (VAN NIEUKERKEN, 1986). All species share the typical venation, with the closed cell shifted towards the base and the  $R_s + M$  almost straight. In the male genitalia, lateral apophyses are present and the transverse bar of the transtilla is absent in the majority of species. *Acalyptris* species are generally pale, usually unicolorous creamy or brownish, only sometimes is some pattern present on the forewings.

A full description of the genus was presented by PUPLESIS (1984) and VAN NIEUKERKEN (1986).

The original descriptions of all species treated here (except *A. piculus* sp. n., *A. brevis* sp. n. and *A. egidijui* sp. n.) were published in Russian.

### Key to the species of the genus *Acalyptris* occurring in the USSR

1. Forewing with distinct non-interrupted fuscous longitudinal stripe (fig. 1) . . . . . *vittatus*
- Forewing without distinct non-interrupted fuscous longitudinal stripe 2
2. Uncus in form of broad lobe without ventral tooth (figs. 4, 7). Lateral apodemes in male genitalia present (fig. 4). Pectinifer on valvae may be

- present (figs. 4, 10, 13) ; large characteristic tufts of androconial scales on abdomen often present (figs. 3, 6, 9) . . . (*repeteki* group) . . . . 3
- Uncus in form of inverse "v" with sharp ventral tooth (figs. 23, 26). Lateral apodemes in male genitalia absent. Pectinifers on valvae absent ; tufts of androconial scales on abdomen absent or obsolete . . . . . (*shafirkanus* group) 9
3. Abdomen of male with large tufts of androconial scales on tergites . . . . . 4
- Abdomen without tufts of androconial scales . . . . . 7
4. Central element of gnathos narrow and with pointed tip . . . . . 5
- Central element of gnathos more or less broad and with rounded or truncate tip . . . . . 6
5. Tufts of androconial scales fuscous or ochreous-brown ; clear triangular ochreous-brown sclerotizations present on abdominal tergites (fig. 5) . . . . . *arenosus*
- Tufts of androconial scales creamy or pale brownish ; triangular ochreous-brown sclerotizations, on abdominal tergites absent . . . . . *falkovitshi*
6. Gnathos caudally truncated, uncus slightly narrowed caudally, pectinifer very distinct and always strongly isolated (fig. 13) . . . . . *lvovskyi* (= *turanicus* syn. n.)
- Gnathos not caudally truncate, uncus trapezoid, pectinifer on valvae not distinct and not strongly isolated (fig. 7) . . . . . *pallens*
7. Forewings with distinct fuscous pattern (fig. 15). Gnathos not sharply tapering, but cut off apically . . . . . *turcomanicus*
- Forewings without distinct pattern. Gnathos sharply tapering apically 8
8. Valvae relatively short, slightly tapering apically (fig. 18) . . . . *galinae*
- Valvae long and narrow, slightly broader apically (fig. 20) . . *repeteki*
9. Valvae with distinct inner lobe (or lobes) basally or apically . . . . 10
- Valvae without lobes, narrower apically . . . . . 12
10. Pseuduncus without distinct lateral lobes . . . . . 11
- Pseuduncus with two large lateral lobes . . . . . *egidijui* sp. n.
11. Aedeagus with 3 wide apical lobes, vinculum very wide anteriorly . . . . . *shafirkanus*
- Aedeagus without wide apical lobes, vinculum slightly narrowed anteriorly . . . . . *desertellus*
12. Aedeagus strongly and abruptly narrowed basally . . . . . *piculus* sp. n.
- Aedeagus not narrowed basally . . . . . 13
13. Arms of transtilla more or less triangular, not narrowed abruptly . . . . . *kizilkumi*
- Arms of transtilla abruptly narrowed anteriorly . . . . . *brevis* sp. n.

## Checklist of USSR species of the genus *Acalyptris* MEYRICK

### The *repeteki* group

1. *A. vittatus* (PUPLESIS, 1984)
2. *A. arenosus* (FALKOVITSH, 1986)
3. *A. pallens* (PUPLESIS, 1984)
4. *A. falkovitshi* (PUPLESIS, 1984)
5. *A. lyovskyi* (PUPLESIS, 1984)  
= *Microcalyptris turanicus* PUPLESIS, 1984 (syn. n.)
6. *A. turcomanicus* (PUPLESIS, 1984)
7. *A. galinae* (PUPLESIS, 1984)
8. *A. repeteki* (PUPLESIS, 1984)

### The *shafirkanus* group

9. *A. shafirkanus* (PUPLESIS, 1984)
10. *A. desertellus* (PUPLESIS, 1984)
11. *A. piculus* sp. n.
12. *A. kizilkumi* (FALKOVITSH, 1986)
13. *A. brevis* sp. n.
14. *A. egidijui* sp. n.

### The *repeteki* group

The male genitalia of the species in this group have the uncus in the form of a broad lobe, without sharp tooth ventrally. In contrast to the *shafirkanus* group, all species have a well developed pectinifer, only in two species is it weakly developed (*A. pallens*, *A. galinae*). Large tufts of long androconial scales are present on the male abdominal tergites of most species. The female genitalia often possess long setae. The group includes morphologically closely related species. This appears to be a typical desert group, being widely distributed in the deserts of the USSR and Mongolia. It also shows a slight morphological resemblance to some Nearctic species, such as *A. thoracealbella* CHAMBERS.

*Acalyptris vittatus* (PUPLESIS) (figs. 1-2, 40).

*Microcalyptris vittatus* PUPLESIS, 1984 : 491-492.

Male unknown.

Female characterised by a longitudinal brown stripe on the forewings (fig. 1), a large bursa copulatrix and very long setae on the abdominal tergites (fig. 2).



MATERIAL EXAMINED : 1 ♀ (holotype), Uzbekistan, Kyzylkum, Zhamansai, 22.IX.1968, M. FALKOVITSH.

***Acalyptis arenosus* (FALKOVITSH)** (figs. 3-5, 40).

*Microcalyptis arenosus* FALKOVITSH, 1966 : 168-169.

Externally this species can be distinguished by a darker reddish-brown tuft of androconial scales (fig. 3). In the male genitalia *A. arenosus* is similar to *A. falkovitshi* and *A. lvoivskiyi* (fig. 4), but separated from the latter by the pointed central element of the gnathos ; from *falkovitshi* by the presence of brown triangular sclerotizations on the abdominal tergites (fig. 5) and by the slightly curved valves. Female unknown.

MATERIAL EXAMINED : 5 ♂ (1 ♂ holotype), Uzbekistan, Zhamansai, 140 km N-W Shafirkan, 10.VI.1966 ; 1 ♂, same locality, 20.V.1967 ; 1 ♂, Turkmenistan, Repetek, 11.V.1983, M. FALKOVITSH ; 4 ♂, Turkmenistan, Sandykatchi, 29.IV-3.V.1986, R. PUPLESIS.

***Acalyptis pallens* (PUPLESIS)** (figs. 6-8, 38).

*Microcalyptis pallens* PUPLESIS, 1984 : 501.

*A. pallens* is characteristically a more or less pale species (fig. 6), similar to *A. galinae*, *A. repeteki* and some specimens of *A. lvoivskiyi*. It can be separated from these species by the presence of pale tufts on the abdomen (in *A. lvoivskiyi* the tufts are brown, in *A. galinae* and *A. repeteki* they are absent). In the male, *A. pallens* is easily recognised by a wide pseuduncus and central element of gnathos (fig. 7) ; female genitalia separated from *A. galinae* by the presence of well developed anal papillae and longer posterior apophyses (fig. 8).

MATERIAL EXAMINED : 6 ♂ (holotype and paratypes), Mongolia, Bajan-Chongor aimak, 160 km S Shine-Dzhista, 11.VII.1981, A. LVOVSKIY ; 2 ♂ (paratypes), USSR, Uzbekistan, Tamdybulak, 6.V.1965, PASTUCHOV ; 2 ♂ (paratypes), USSR, 7 km N Tamdybulak, 6.V.1965 ; 2 ♂ (paratypes), Uzbekistan, 70 km N-W Gazli, 26.V.1965 ; 1 ♂ (paratype), Uzbekistan, Ispas, 70 km N-W Chardzhou, 30.V.1965 ; 2 ♂ (paratypes), Uzbekistan, Zhamansaj, 149 km NW Shafirkan, 20.V.1967, M. FALKOVITSH ; 1 ♂, Uzbekistan, 7 km N Tamdybulak, 5.V.1965, M. FALKOVITSH ; 6 ♂, 5 ♀, Turkmenistan, Sandykatchi, 29.IV-2.V.1986, R. PUPLESIS.

***Acalyptis falkovitshi* (PUPLESIS)** (figs. 9-11, 39).

*Microcalyptis falkovitshi* PUPLESIS, 1984 : 499.

In contrast to *A. lvoivskiyi*, the males are characterised by the pointed, narrower central element of the gnathos (fig. 10), the pale tufts on the abdomen, and the forewing pattern : the costal and especially the dorsal margins creamy, free of brownish scales (fig. 9). Unlike in *A. lvoivskiyi* and *A.*

*arenosus* (fig. 5) the sclerotizations on the abdominal tergites are not visible. The female genitalia are difficult to separate from those of *lvovskyi* (fig. 11), but the adults can usually be distinguished from the wing pattern.

MATERIAL EXAMINED : 13 ♂ (holotype and paratypes), Uzbekistan, 7 km N Tamdybulak, 5.V.1965, M. FALKOVITSH ; 1 ♂ (paratype), Uzbekistan, Zhamansaj, 20.V.1967, M. FALKOVITSH ; 18 ♂, 2 ♀, Turkmenistan, Sandykatchi, 29.IV-4.V.1986, R. PUPLESIS.

***Acalyptis lvovskyi* (PUPLESIS) (figs. 12-14, 38).**

*Microcalyptis lvovskyi* PUPLESIS, 1984 : 494-495.

*Microcalyptis turanicus* PUPLESIS, 1984 : 497-498, **syn. n.**

Usually, unlike all other species of this group, the forewing of *A. lvovskyi* is densely covered with brown (or brownish) scales. Occasionally, the anal edge of the forewing is pale creamy. Sometimes the whole forewing is pale, weakly irrorate with numerous brownish scales (fig. 12). Easily separated from all related species (except *A. turcomanicus*) by the central element of gnathos, which is caudally indented (fig. 13). Valvae longer and slender than in *A. turcomanicus* or *A. falkovitshi*. Female genitalia similar to *A. falkovitshi*, characterised by long chaetae and elongate bursa copulatrix with signa with numerous small spines (fig. 14).

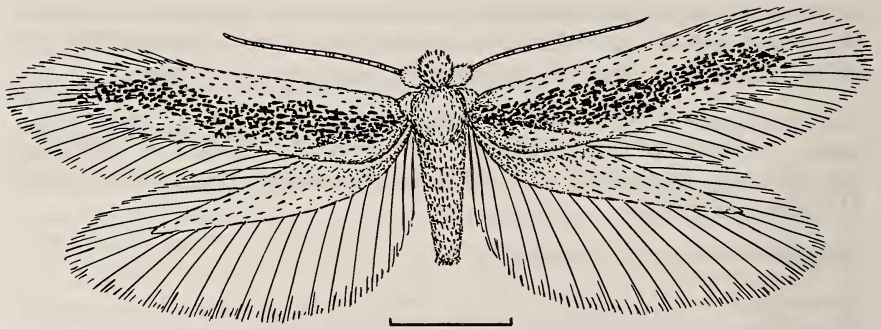
MATERIAL EXAMINED : 3 ♂ (holotype and paratypes), Mongolia, Bajan Chongor aimak, 160 km S Shine-Dzhista, 11.VIII.1981, A. LVOVSKYI ; 1 ♂ (paratype), Chovd aimak, Iolchon, 22.VI.1980, I. KERZHNER ; 4 ♂ (paratypes), USSR, Uzbekistan, 7 km N Tamdybulak, 5.V.1965 ; 3 ♂ (paratypes), Uzbekistan, 70 km N-W Gazli, 26.V.1965 ; 3 ♂ (paratypes), Uzbekistan, Zhamansaj, 12-20.V.1966 ; 1 ♂ (paratype), Bukhara Region, Shafirkan, 4.IX.1971 ; 2 ♂ (paratypes), Uzbekistan, Zhamansaj, 140 km N-W Shafirkan, 20.V.1967 ; 2 ♂ (paratypes), Turkmenistan, Repetek, 23.IV-6.V.1983, M. FALKOVITSH ; 1 ♂ (paratype), same locality, 2.VIII.1981, V. KRIVOCHTSKYI ; 1 ♂ (holotype of *M. "turanicus"*), Uzbekistan, 140 km N-W Shafirkan, 20.V.1967, M. FALKOVITSH ; 101 ♂, 17 ♀, Turkmenistan, Sandykatchi, 29.IV.-5.V.1986, R. PUPLESIS.

***Acalyptis turcomanicus* (PUPLESIS) (figs. 15-16, 40).**

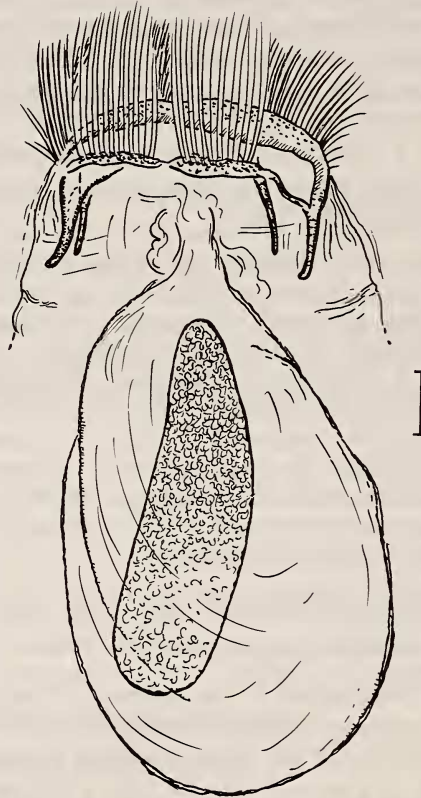
*Microcalyptis turcomanicus* PUPLESIS, 1984 : 499-500.

This species is distinguished by the absence of abdominal tufts and the patches of brown scales on the pale forewings (fig. 15) ; in the male genitalia by a characteristic form of the valvae, aedeagus and gnathos (fig. 16). The gnathos is similar to that of *A. lvovskyi* ; but *A. turcomanicus* can easily be distinguished from all other *Acalyptis* spp. by the combined characters.

MATERIAL EXAMINED : 1 ♂ (holotype), Turkmenistan, 70 km N Ashkhabad, Karakul, 27.IX.1967, M. FALKOVITSH.

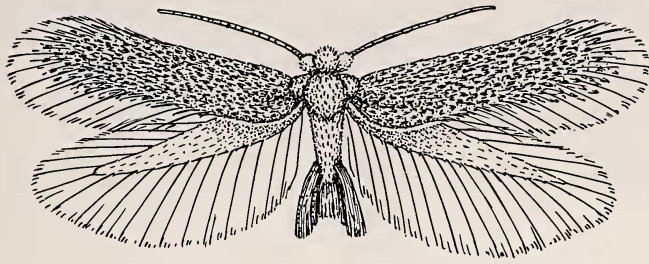


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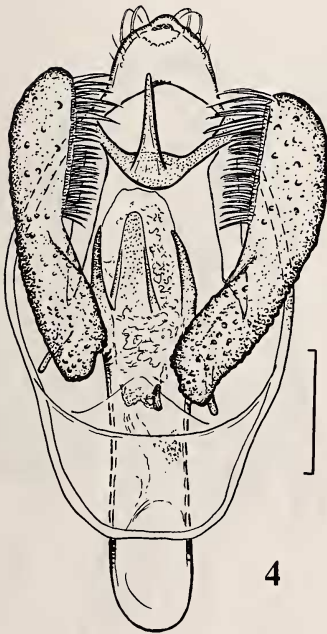


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Figs. 1-2. *Acalyptris vittatus* (PUPL.), holotype; Uzbekistan, Kizilkum, Zhamansai, 22.IX.1986, leg. M. FALKOVITSH; 1 - imago (scale 1 mm); 2 - male genitalia (scale 0,1 mm).



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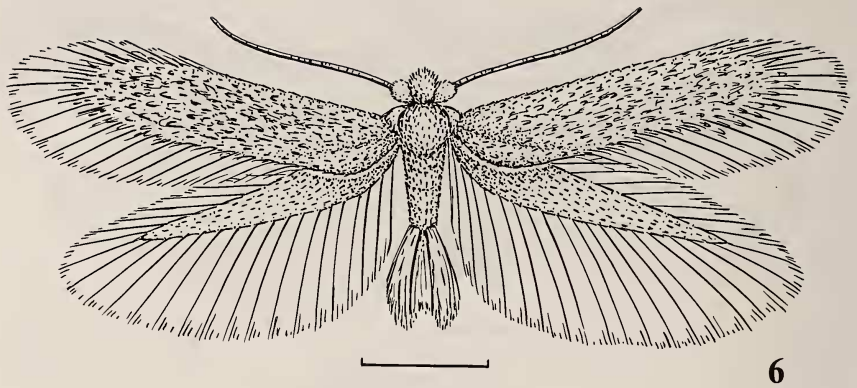


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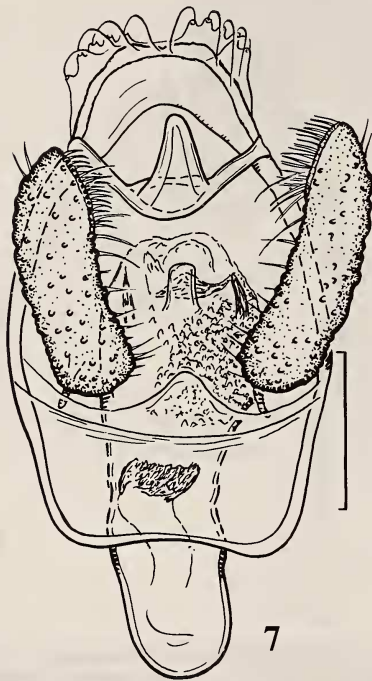


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Figs. 3-5. *Acalypris arenosus* (FALK.): 3 – holotype, Uzbekistan, Zhamansai, 140 km N-W Shafirkan, 10.VI.1966, leg. M. FALKOVITSH (scale 1 mm); 4 – male genitalia, Turkmenistan, Sandykatchi, 1.V.1986, leg. R. PUPLESIS (scale 0,1 mm); 5 – abdominal segments, same locality, 3.V.1986, (scale 0,1 mm).



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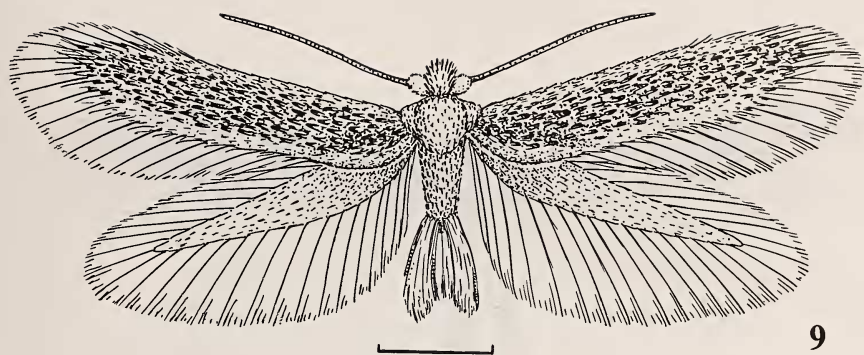
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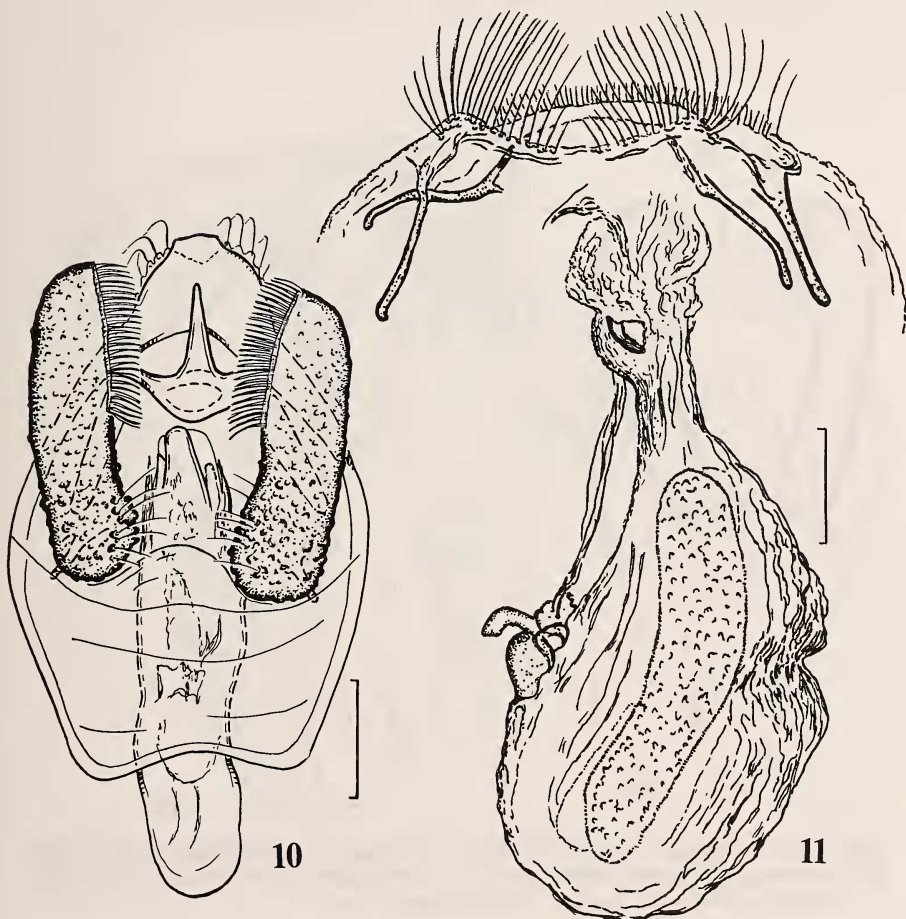
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Figs. 6-8. *Acalyptiris pallens* (PURL.): 6 — imago, Turkmenistan, Sandykatchi, 29.IV.1986, leg. R. PUPLESIS (scale 1 mm); 7 — male genitalia, same data (scale 0,1 mm); 8 — female genitalia, same locality, 2.V.1986 (scale 0,1 mm).





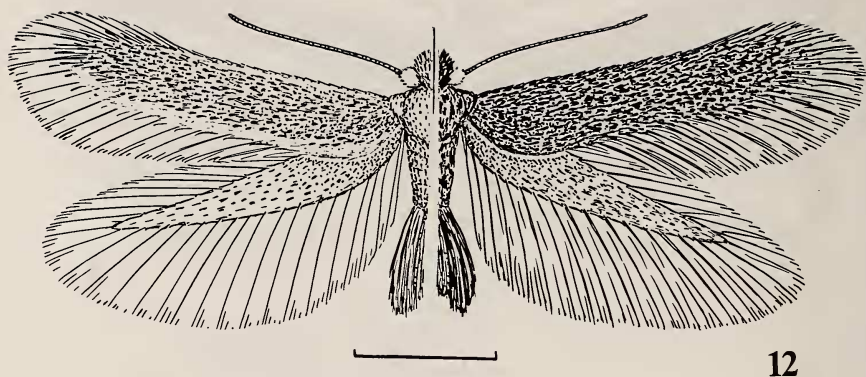
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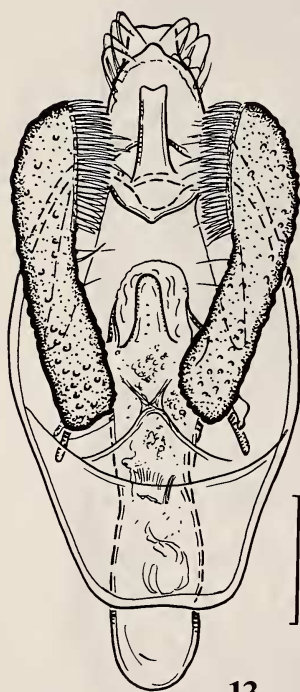
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Figs. 9-11. *Acalyptris falkovitshi* (PUBL.): 9 – holotype, Uzbekistan, 7 km N Tamdybulak, 5.V.1965, leg. M. FALKOVITSH (scale 1 mm); 10 – male genitalia, Turkmenistan, Sandykatchi, 29.IV.1986, leg. R. PUPLESIS (scale 0,1 mm); 11 – female genitalia, same data (scale 0,1 mm).



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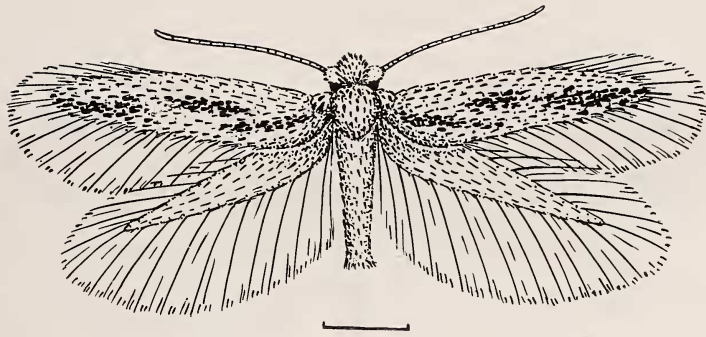


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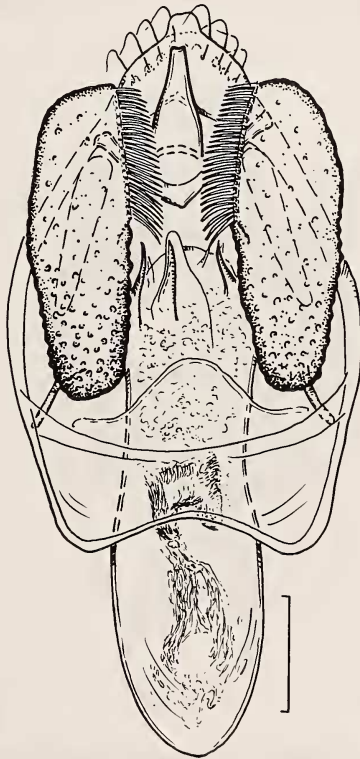


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Figs. 12-14. *Acalyptris lvoyskyi* (PUBL.): 12 – imago, Turkmenistan, Sandykatchi, 29.IV.1986, leg. R. PUPLESIS (scale 1 mm); 13 – male genitalia, same data (scale 0,1 mm); 14 – female genitalia, same locality, 1.V.1986 (scale 0,1 mm).

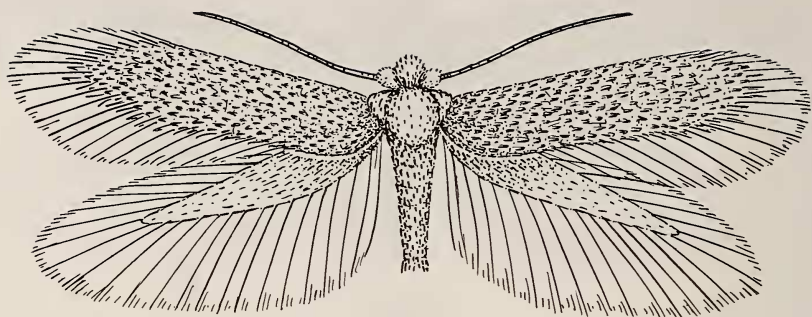


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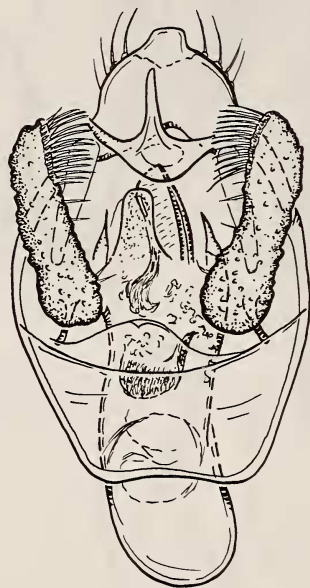


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Figs. 15-16. *Acalyptris turcomanicus* (PUPL.); holotype, Turkmenistan, 70 km N Ashkhabad, Karakul, 27.X.1967, leg. M. FALKOVITSH, 15 — imago (scale 1 mm); 16 — male genitalia (scale 0,1 mm).

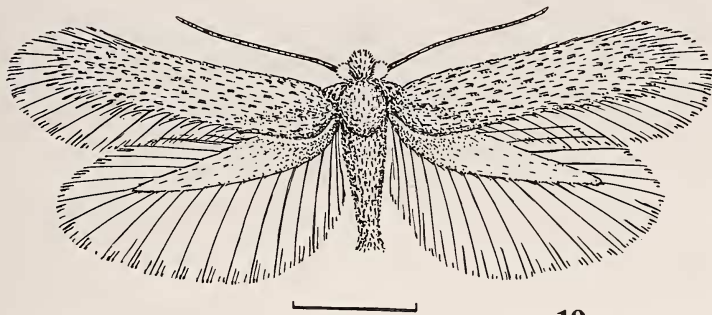


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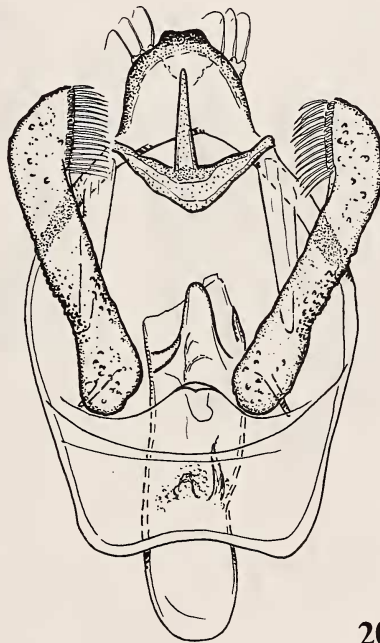


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Figs. 17-18. *Acalyptris galinae* (PUBL.): 17 — imago, Turkmenistan, Sandykatchi, 1.V.1986, leg. R. PUPLESIS (scale 1 mm); 18 — male genitalia, same data (scale 0,1 mm).



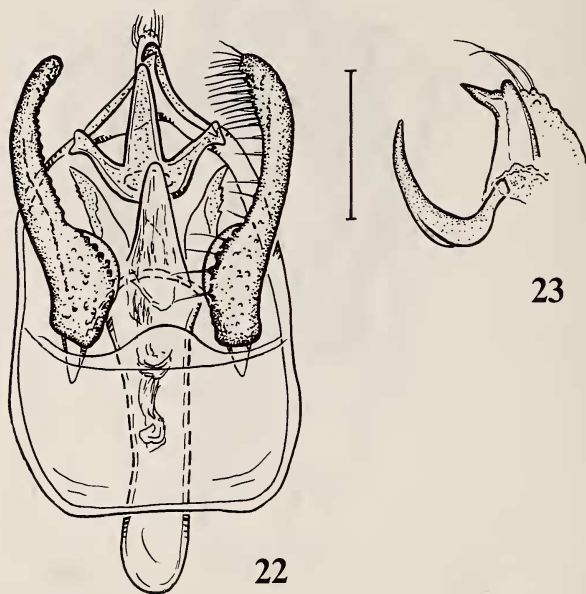
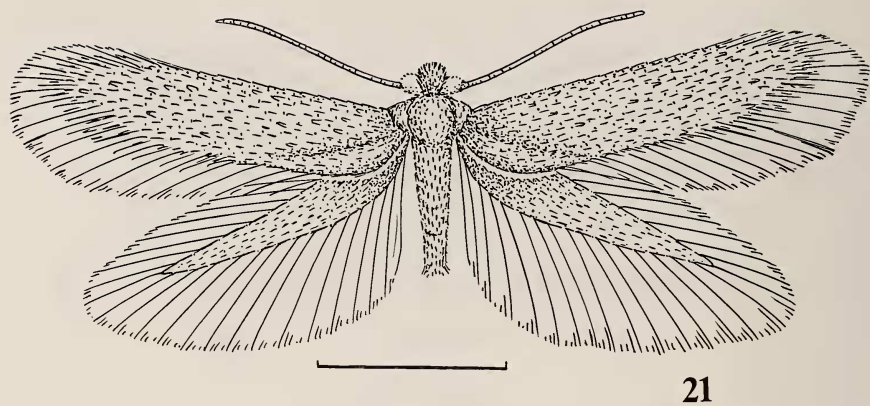
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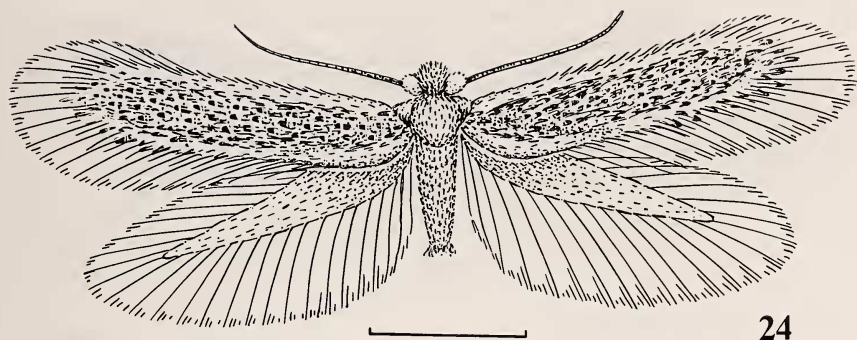
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Figs. 19-20. *Acalyptris repeteki* (PUPL.), holotype, Turkmenistan, Repetek, 4.V.1983, leg. M. FALKOVITSH : 19 – imago (scale 1 mm) ; 20 – male genitalia (scale 0,1 mm).

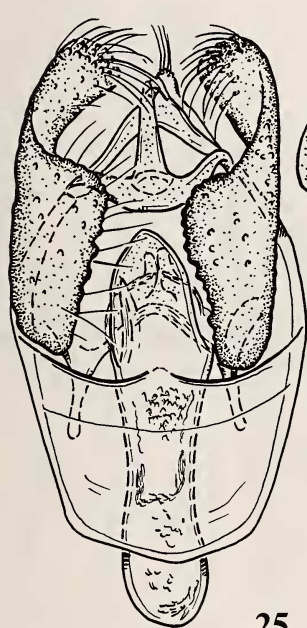




Figs. 21-23. *Acalyptris shafirkanus* (PUPL.), holotype, Uzbekistan, Ayakguzhumdy, 40 km E Dzhingildy, 10.VI.1965, leg. M. FALKOVITSH : 21 — imago (scale 1 mm) ; 22 — male genitalia (scale 0,1 mm) ; 23 — same, lateral view of uncus and gnathos.



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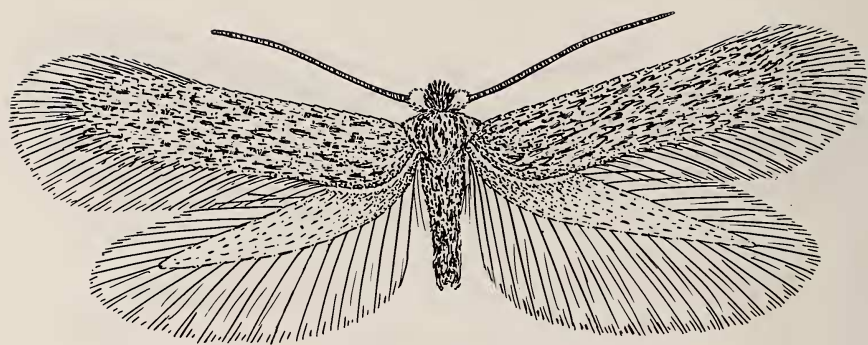


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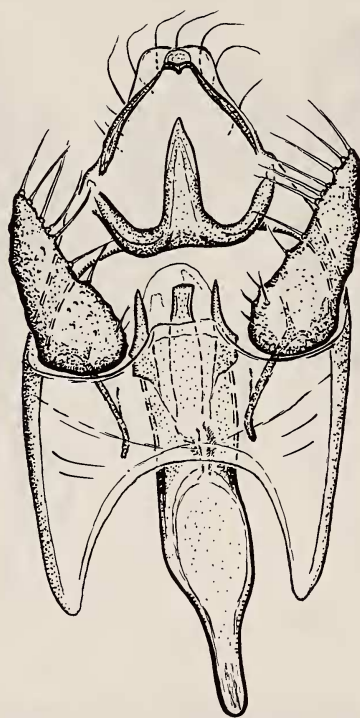


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Figs. 24-27. *Acalyptris desertellus* (PURL.): 24 — holotype, Uzbekistan, Zhamansaj, 140 km N-W Shafirkan, 20.V.1967, leg. M. FALKOVITSH (scale 1 mm); 25 — male genitalia, same data (scale 0,1 mm); 26 — same, lateral view uncus and gnathos; 27 — female genitalia, Turkmenistan, Sandykatchi, 30.IV.1986, leg. R. PUPLESIS (scale 0,1 mm).

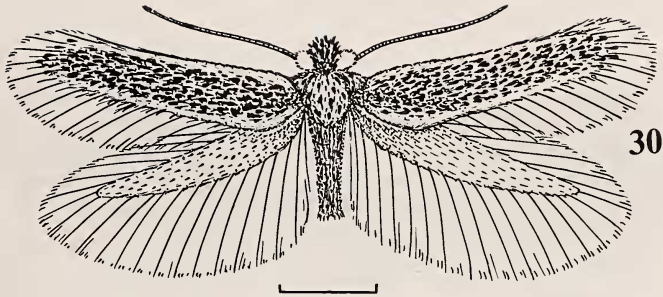


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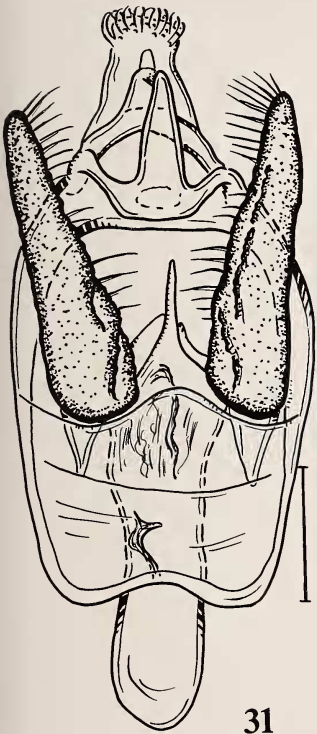


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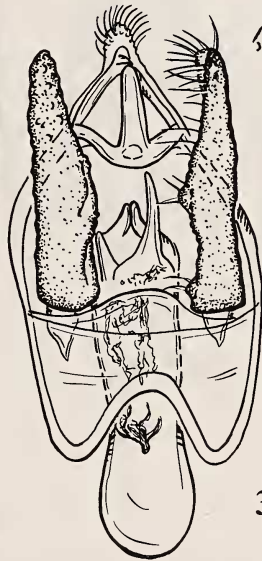
Figs. 28-29. *Acalyptris piculus* sp. n., holotype, Tadzhikistan, 30 km N Dushanbe, 15.VIII.1986, leg. R. PUPLESIS: 28 — imago (scale 1 mm); 29 — male genitalia (scale 0,1 mm).



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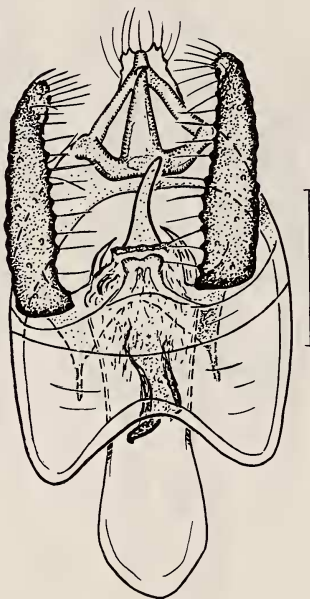


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Figs. 30-33. *Acalyptris kizilkumi* (FALK.): 30 – holotype, Uzbekistan, 7 km N Tamdybulak, 5.V.1965, leg. M. FALKOVITSH (scale 1 mm); 31 – male genitalia, holotype, same data (scale 0,1 mm); 32 – male genitalia, Tadjhikistan, 30 km N Dushanbe, Kondara, 20.VIII.1986, leg. R. PUPLESIS (scale 0,1 mm); 33 – female genitalia, Turkmenistan, Sandykatchi, 1.V.1986, leg. R. PUPLESIS (scale 0,1 mm).



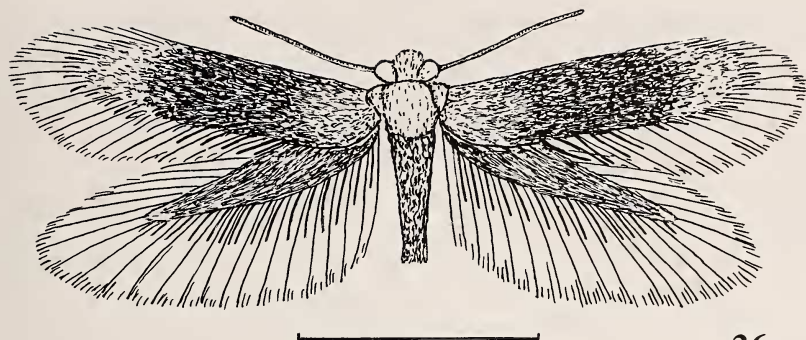
34



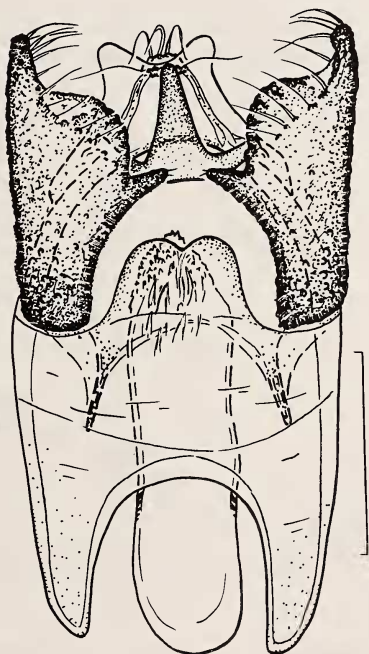
35

Figs. 34-35. *Acalyptris brevis* sp. n., holotype, Turkmenistan, env. Ashkhabad, 7.VIII.1988, leg. R. PUPLESIS : 34 – imago (scale 1 mm) ; 25 – male genitalia (scale 0,1 mm).





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Figs. 36-37. *Acalyptris egidijui* sp. n., holotype, Turkmenistan, Tedzhen, 8.VIII.1988, leg. R.  
PUPLESIS : 36 - imago (scale 1 mm) ; 37 - male genitalia (scale 0,1 mm).

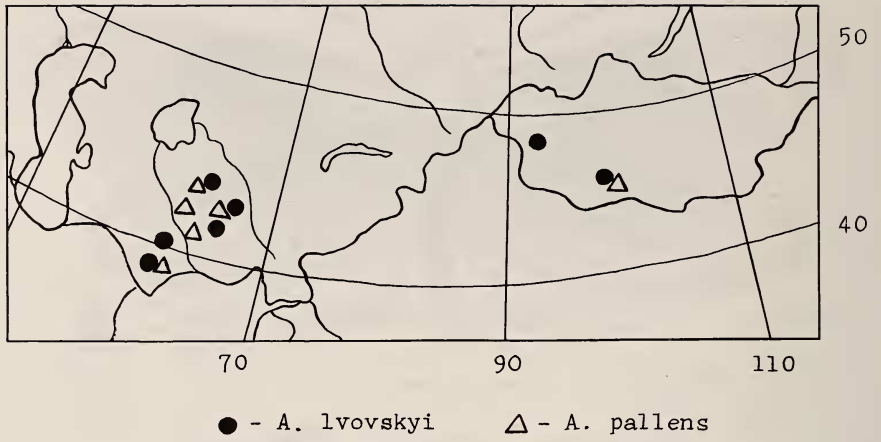


Fig. 38. Distribution of *Acalyptris lvovskyi* (PUPL.) and *A. pallens* (PUPL.).

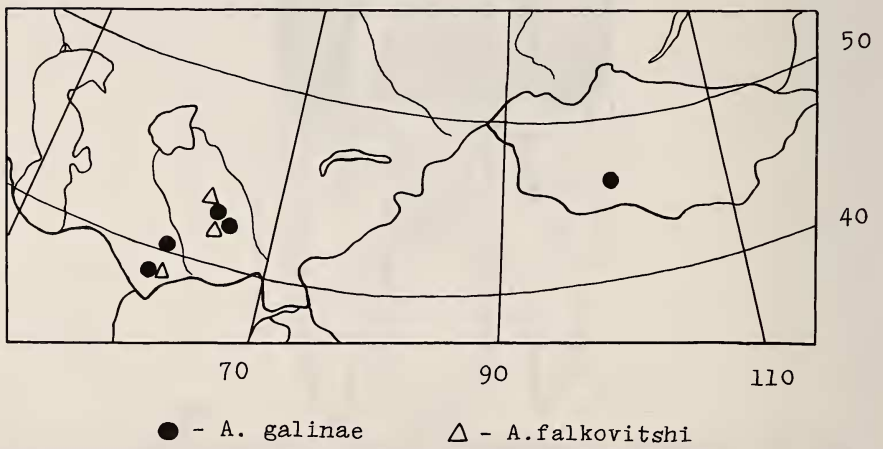


Fig. 39. Distribution of *Acalyptris galinae* (PUPL.) and *A. falkovitshi* (PUPL.).

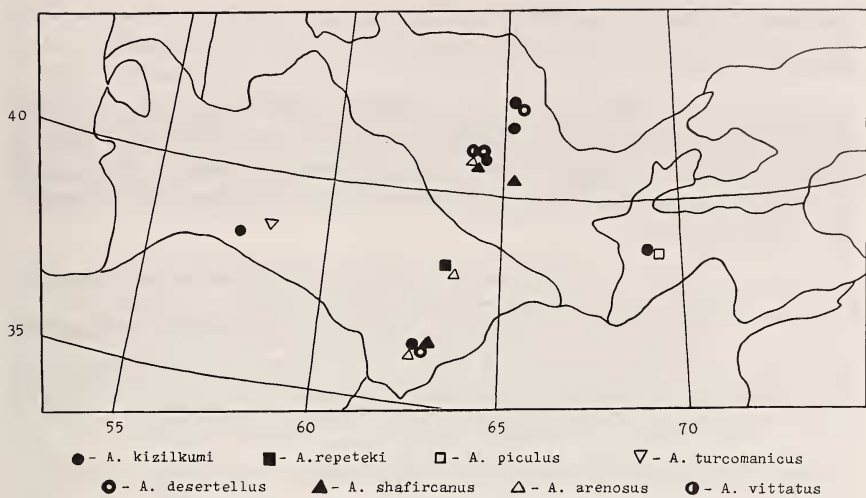


Fig. 40. Distribution of *Acalyptris* spp.

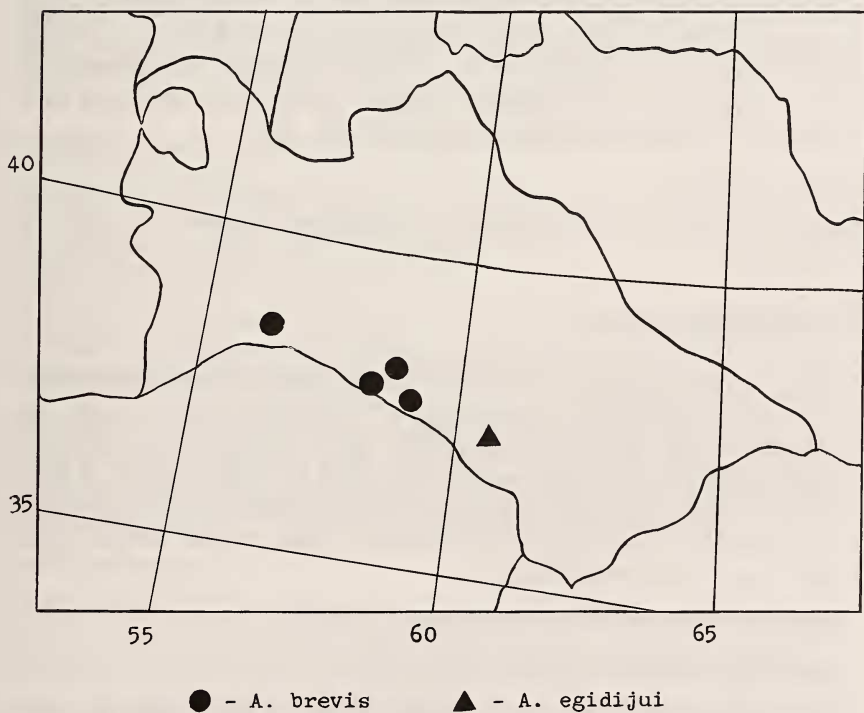


Fig. 41. Distribution of *Acalyptris brevis* sp. n. and *A. egidijui* sp. n.

***Acalyptris galinae* (PUPLESIS) (figs. 17-18, 39).**

*Microcalyptris galinae* PUPLESIS, 1984 : 503.

*A. galinae* is externally very similar to both *A. shafirkanus* and *A. pallens* (fig. 17). It is easily separated from the latter by its small size and absence of abdominal tufts. *A. galinae* is recognized by its male genitalia : valvae small and slightly narrowed apically, aedeagus and its apical lobes with characteristic shape (fig. 18).

MATERIAL EXAMINED : 2 ♂ (holotype and paratype of *A. galinae galinae* PUPLESIS), Mongolia, Bojan Chongor aimak, 160 km S Shine-Dzhista, 3-11.VIII.1981, A. LVOVSKIY ; 1 ♂ (holotype of *A. galinae mesasiaticus* PUPLESIS), USSR, Uzbekistan, Zhamansaj, 140 N-W Shafirkan, 20.V.1967 ; 2 ♂ (paratypes of *A. galinae mesasiaticus*), Turkmenistan, Repetek, 28.VIII.1981 and 22.VI.1982, V. KRIVCHATSKIY ; 19 ♂, 3 ♀, Turkmenistan, Sandykatchi, 29.IV-5.V.1986, R. PUPLESIS.

***Acalyptris repeteki* (PUPLESIS) (figs. 19-20, 40).**

*Microcalyptris repeteki* PUPLESIS, 1984 : 494.

Characterised externally by the pale colour of the forewings and absence of tufts of androconial scales on the abdomen (fig. 19). In this respect it could be confused with *A. galinae* and *A. shafirkanus*. In its genitalia *A. repeteki* mostly resembles *A. lvovskyi* and *A. falkovitshi*. However, in contrast to *A. lvovskyi* the gnathos in this species is caudally pointed and compared to *A. falkovitshi*, the valvae are longer and slender (fig. 20).

Female unknown.

MATERIAL EXAMINED : 1 ♂ (holotype), Turkmenistan, Repetek, 4.V.1983, M. FALKOVITSH.

**The *shafirkanus* group**

Unlike the *repeteki* group, the genitalia of the species in this group have a typical uncus in the form of an inverted "v", with sharp ventral tooth. The pectinifer on the valvae and abdominal tufts of androconial scales are apparently absent. The species are not restricted to desert habitats, as some have been found in the mountainous parts of Tadzhikistan and Turkmenistan (the Kopet-Dag mountains) and others are found in the Mediterranean region (e.g. *A. minimella* REBEL).

***Acalyptris shafirkanus* (PUPLESIS) (figs. 21-23, 40).**

*Microcalyptris shafirkanus* PUPLESIS, 1984 : 493.

Moths pale, unicolourous, externally very similar to *A. galinae*, but abdominal tufts absent (fig. 21).

Easily separated from all other species by the male genitalia : vinculum very broad, aedeagus with three large lobes apically, valves, unlike *A. desertellus*, broadened basally (fig. 22).

MATERIAL EXAMINED : 7 ♂ (holotype and paratypes), Uzbekistan, Ayakguzhumdy, 40 km E Dzhingildy, 10-15.VI.1965, 1 ♂ (paratype), Uzbekistan, Bukhara Region, Shafirkan, 4.IX.1971, M. FALKOVITSH ; 3 ♂, Turkmenistan, Sandykatchi, 1-4.V.1986, R. PUPLESIS.

*Acalyptris desertellus* (PUPLESIS) (figs. 24-27, 40).

*Microcalyptris desertellus* PUPLESIS, 1984 : 493-494.

This species is nearest to *A. shafirkanus* from which it differs by the pale brownish scales on the forewings, only the margins remaining creamy (fig. 24). The valva and aedeagus are quite different from all other *Acalyptris* species, the aedeagus having one large apical lobe. Transverse bar of transtilla present, but flimsy (fig. 25). Anterior apophyses in female very broad (fig. 27).

MATERIAL EXAMINED : 2 ♂ (holotype and paratype), Uzbekistan, Zhamansaj, 140 km N-W Shafirkan, 20.V.1967 ; 3 ♂ (paratypes), Uzbekistan, 7 km N Tamdybulak, 5-6.V.1965, M. FALKOVITSH ; 5 ♂, 2 ♀, Turkmenistan, Sandykatchi, 30.IV-3.V.1986, R. PUPLESIS.

*Acalyptris piculus* sp. n. (figs. 28-29, 40).

HOLOTYPE : ♂, Tadzhikistan, 30 km N Dushanbe, 15.VIII.1986, R. PUPLESIS.

PARATYPES : 1 ♂, same locality as holotype, 28.VI.1986, R. PUPLESIS ; 2 ♂, same locality, 21.VIII.1986, R. PUPLESIS.

DIAGNOSIS : Very closely related to *A. minimella* (REBEL) ; characterised by the basally strongly narrowed aedeagus, and by the long arms of the transtilla and lateral lobes of vinculum.

DESCRIPTION : Male. Forewing length 1.7-1.8 mm. Head : frontal tuft greyish-brown or brownish-grey. Eye-caps greyish-cream. Antennae brown. Forewings and thorax creamy, more or less irrorate with sparse greyish-brown scales (fig. 28). Cilia creamy. Hindwing brownish-grey.

Female unknown.

Male genitalia (fig. 29) : Tegumen narrowed into slightly sclerotized pseuduncus, not angular, some long setae dorsally. Uncus in form of inverted "v", ventrally a medial pointed tooth. Gnathos with long central element, which can be narrower than in holotype (fig. 29). Vinculum anteriorly bilobed, lobes long. Valvae triangular, with long stout setae apically. Arms of transtilla



very long and thin, occasionally slightly curved distally. Aedeagus strongly narrowed basally ; apically with one ventral and two lateral lobes.

MATERIAL EXAMINED : The type series only.

*Acalyptis kizilkumi* (FALKOVITSH) (figs. 30-33, 39).

*Microcalyptis kizilkumi* FALKOVITSH, 1986 : 167-168.

Externally similar to *A. falkovitshi*: forewing margins free of brown scales, creamy (fig. 30). Male can be easily separated from *A. falkovitshi* by the absence of abdominal tufts. Male distinguished from other species by form of valvae and aedeagus (with large apical spine ventrally) (fig. 31). The genitalia of this species are extremely variable in size, and form of valvae (fig. 32). In the female genitalia, the anterior apophyses are basally broad and narrowed apically. Many long different setae surround the tip of the abdomen in this species (fig. 33).

MATERIAL EXAMINED : 1 ♂ (holotype), Uzbekistan, 7 km N Tamdybulak, 5.V.1965, M. FALKOVITSH ; 1 ♂, Aznek, 70 km S Tamdybulak, 1.V.1965 ; 1 ♂, Ayakguzhumdy, 40 km E Dzhangildy, 26.IV.1965, M. FALKOVITSH ; 8 ♂, 5 ♀, Turkmenistan, Sandykatchi, 29.IV-5.V.1986 ; 3 ♂, 1 ♀, Turkmenistan, 30 km W Ashkhabad, env, Geok-Tepe, canyon Tshuli, 12.V.1986, R. PUPLESIS ; 1 ♂, Tadzhikistan, 30 km N Dushanbe, canyon Kondara, 20.VIII.1986, R. PUPLESIS.

*Acalyptis brevis* sp. n. (figs. 34-35, 41).

HOLOTYPE : ♂, Turkmenistan : env. Ashkhabad (desert), 7.VIII.1988, R. PUPLESIS.

PARATYPES : 1 ♂, Turkmenistan, canyon Firiuz, env. Ashkhabad (Central Kopet-Dag ridge), 9.V.1986, R. PUPLESIS ; 1 ♂, Turkmenistan, Kalininsk, env. Ashkhabad (Central Kopet-Dag ridge), 6.VIII.1988, R. PUPLESIS ; 1 ♂, Turkmenistan, env. Yuvan-Kala, 30 km E Kara-Kala (Western Kopet-Dag ridge), 18.VIII.1988, R. PUPLESIS.

DIAGNOSIS : Most closely related to *A. kizilkumi* (FALKOVITSH), but easily distinguished by its small size, speckled forewings and structure of the male genitalia, primarily in the narrow arms of the transtilla.

DESCRIPTION : Male. Forewing length 1.5-1.9 mm. Head : frontal tuft pale orange (tinged brown), eye-caps creamish white. Antennae brown on upper side and lighter on underside. Palpi "dirty" cream. Thorax, tegulae and forewings speckled : creamish grey, scattered with darkish brown scales (fig. 34). Hindwings brownish. Cilia of both wings creamy grey to grey.

Female. Unknown.

Male genitalia (fig. 35). Tegumen distinctly produced into broad and long pseuduncus. Weaker developed and sclerotized than in *A. kizilkumi* and slightly variable in length and width. Valvae narrow, inner edge with long chaetae on numerous papillae. Transtilla arms longer than in *A. kizilkumi* and always very narrow. Vinculum with two broad lateral lobes rounded apically. Juxta weakly sclerotized; caudally slightly bilobed. Aedeagus with very large sclerotized apical spine, slightly bent and not very pointed. Two lateral processes in apical part of aedeagus. One very large and wide cornutus.

MATERIAL EXAMINED : the type series only.

*Acalyptris egidijui* sp. n. (figs. 36-37, 41).

HOLOTYPE : ♂, Turkmenistan, Tedzhen (oasis), 8.VIII.1988, R. PUPLESIS.

PARATYPE : ♂, same data as holotype.

DIAGNOSIS : Most closely related to *A. minimella* (REBEL) and *A. loranthella* (KLIMESCH). Easily distinguished from all species of the group by form of valvae, juxta and bilobed uncus. Externally it differs by its distinctive coloration : yellowish forewings medially darkened by black scales.

DESCRIPTION : Male. Forewing length 1.4-1.6 mm. Head : frontal tuft brownish yellow, eye-caps creamish yellow, shiny. Antennae yellowish brown. Tegulae creamy yellow. Thorax possibly yellowish above (colour obliterated by pin in type series). Thorax, legs and palpi creamy yellow, shiny. Forewings creamish yellow, medially darkened by black scales (fig. 36). Hindwings on both sides covered with black scales. Cilia of both wings light, creamy yellowish.

Female. Unknown.

Male genitalia (Fig. 37). Tegumen produced into bilobed pseuduncus with several chaetae. Each lobe rounded apically. Uncus with sharp ventral tooth. Valvae narrowed at apex, strongly bulged medially, with distinct process on inner edge; basally slightly narrowed. Arms of transtilla long and narrow. Transverse bar of transtilla thin. Juxta bilobed. Vinculum with two large lateral lobes. Aedeagus apically with some weakly sclerotized spine-like cornuti.

MATERIAL EXAMINED : the type series only.

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## References

- FALKOVITSH, M. I., 1986. Cesuekrylye (*Lepidoptera*) ostancovyh gor Kuldzhuktau i podgornoj ravnini (jugo-zapadnij Kizilkum) (in Russian). Fauna cesuekrylyh (*Lepidoptera*) SSSR (Trudy vsesojuznojo entomologice shkogo obshestva) 67 : 131-186.
- MEYRICK, E., 1921. *Exotic Microlepidoptera* 2 (13) : 385-416.
- NIEUKERKEN, E. J. VAN, 1986. Systematics and phylogeny of Holarctic genera of *Nepticulidae* (*Lepidoptera*, *Heteroneura* : *Monotrysia*). *Zool. Verh., Leiden* 236 : 1-93.
- PUPLESIS, R. K., 1984. A review of nepticulid moths of the genus *Microcalyptis* (*Lepidoptera*, *Nepticulidae*) from deserts of Mongolia and the USSR (in Russian). *Nasekomye Mongolii* 9 : 484-507.
- PUPLESIS, R. K., 1990. The descriptions of females of 5 *Acalyptis* MEYRICK species (*Lepidoptera*, *Nepticulidae*) (in Russian). *Nasekomye Mongolii*, 10, in press.
- SCOBLE, M. J., 1980. The genus *Niepeltia* STRAND : taxonomy and comments on structure and relationships (*Lepidoptera* : *Nepticulidae*). *Ann. Transv. Mus.* 32 : 197-229.